

Title (en)
Neutron multiplicity counting

Title (de)
Neutronenmultiplizitätszählung

Title (fr)
Décompte de la multiplicité de neutrons

Publication
EP 2478391 A1 20120725 (EN)

Application
EP 10729922 A 20100709

Priority
• EP 09170727 A 20090918
• EP 2010059905 W 20100709
• EP 10729922 A 20100709

Abstract (en)
[origin: EP2299295A1] Each pulse of a pulse sequence received from a neutron detector is set as a trigger pulse triggering a predefined gate, the multiplicity of pulses within this gate is determined, the pulse having triggered the gate is assigned to a multiplicity category corresponding to this multiplicity of pulses and the trigger-to-predecessor distances from the trigger pulse to pulses preceding the trigger pulse within a certain range in the pulse sequence are determined. The range within which one looks for predecessor pulses of each trigger pulse exceeds the dead time of the neutron detector. For each multiplicity category, the number of trigger pulses assigned thereto is determined. For each multiplicity category, one builds, based upon the trigger-to-predecessor intervals determined, a distribution in time after an arbitrary preceding pulse of trigger pulses assigned to that specific multiplicity category. Based upon the multiplicity-specific distribution, one estimates, for each multiplicity category, the number of trigger pulses lost due to neutron detector dead time that would have been assigned to the multiplicity category. When the estimated number of lost trigger pulses is known, the number of trigger pulses assigned to each multiplicity category is accordingly corrected. As trigger pulses could have been assigned to a wrong multiplicity category due to missing pulses inside the triggered gates, the number of trigger pulses assigned to each multiplicity category may additionally be corrected for that using a similar technique.

IPC 8 full level
G01T 3/00 (2006.01)

CPC (source: EP US)
G01T 3/00 (2013.01 - EP US)

Citation (search report)
See references of WO 2011032743A1

Cited by
WO2019025479A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)
EP 2299295 A1 20110323; EP 2478391 A1 20120725; EP 2478391 B1 20131009; ES 2441067 T3 20140131; PL 2478391 T3 20140331; US 2013043379 A1 20130221; US 8884212 B2 20141111; WO 2011032743 A1 20110324

DOCDB simple family (application)
EP 09170727 A 20090918; EP 10729922 A 20100709; EP 2010059905 W 20100709; ES 10729922 T 20100709; PL 10729922 T 20100709; US 201013394598 A 20100709